

AMENDMENT UNDER 37 C.F.R. §1.111
U.S. SERIAL NO. 10/782,928

ART UNIT 2872
Q79936

AMENDMENTS TO THE DRAWINGS

Appended hereto is a replacement sheet for Fig. 4 in compliance with 37 C.F.R. §§1.83(a), 1.84(p)(4) and 1.121(d).

Attachment: One (1) Replacement Sheet

REMARKS

I. Formal Matters.

Claims 1-24 are currently pending in this application. As an initial matter, Applicant thanks the Examiner for acknowledging the claim to priority under 35 U.S.C. §119 and for confirming receipt of a certified copy of Applicant's priority document. In addition, Applicant appreciates the Examiner's consideration of the references submitted via an Information Disclosure Statement on February 23, 2004, as evidenced by her return of an initialled Form PTO/SB/08 A&B to the office of the undersigned.

II. Drawings.

The Examiner objects to the drawings under 37 C.F.R. §1.83(a) for failing to show symbols X , Y and $\tan(1')$ (OA page 2, numbered paragraph 1). Applicant respectfully traverses the objection to the drawings under 37 C.F.R. §1.83(a) for failing to show X , Y and $\tan(1')$ for the reasons that follow. X is clearly defined as definition in dots per linear inch (claims 1 and 14; paragraph [0015]; and *quoting from* paragraph [0016], "[n]ote that the definition means the number of dots per the length of one inch."). X is derived from the equation provided in claims 1, 14 and paragraph [0015]. The variables, dimensions and functions of said equation are defined in the specification and readily recognized by one ordinarily skilled in the art. Specifically, X is dots per linear inch (paragraph [0015]), 25.4 is millimeters per inch (paragraph [0016]), D is distance in millimeters (mm) (paragraph [0015]), \tan is the standard geometric

tangent function, and $1'$ is one minute, where 60 minutes equals one degree (paragraph [0021]). Finally, angle $1'$ is the incident angle on the center of a cylindrical lens from the edge of a pixel, analogous to a minimum viewing angle,¹ shown as α in Fig. 11, and described in paragraphs [0024] and [0084]-[0085].

As to Y , Applicant has clearly defined, X as dots per linear inch in one array direction, and Y as dots per linear inch in a second perpendicular array direction, crossing the X array direction (paragraph [0024]). The specification has been amended to more particularly recite $1'$ in terms of alpha, α . Fig. 4 has been amended to include references X and Y . Accordingly, withdrawal of the objection to the drawings under 37 C.F.R. §1.83(a) is believed to be in order and is hereby respectfully requested.

The Examiner objects to the drawings under 37 C.F.R. §1.84(p)(4) because reference character “D” has been used to designate both *distance from the most distant point* to the display panel and *distance from midpoint* to display panel, as recited in claims 14 and 1, respectively (OA page 2, numbered paragraph 2). Amended claims define distance, D, as the distance between the display panel and the midpoint (claims 1 and 14). The claim amendments are made for clarity and contain no new matter, where one ordinarily skilled in the art would readily recognize the consistency across claims and across the specification as defining distance D as the distance between the display panel and the viewer’s midpoint. Accordingly, withdrawal of the

¹ http://www.da-lite.com/education/angles_of_view.php?action=details&issueid=23

objection to the drawings under 37 C.F.R. §1.84(p)(4) is asserted as being appropriate and is hereby respectfully requested.

III. Claims.

The Examiner rejects claims 4, 5, 9, 10, 17, 18, 22 and 23 under 35 U.S.C. §112, 1st paragraph, as failing to comply with the enablement requirement. The Examiner alleges that the specification, including the figures, fails to provide enabling support for a cylindrical lens extending in a row direction therein providing a vertical lens function, and therein failing to provide 3D stereoscopic viewing because of the horizontal spacing between a viewer's eyes, and the lack of vertical spacing thereof. Applicant clearly provides enablement for a horizontal lens function and cylindrical lens extending in the column direction, and corresponding definition X (paragraphs [0014]-[0015]) to provide 3D viewing. The Examiner reads the definition of Y in dependent claims 2 and 15 as providing, or attempting to claim, 3D imagery dependent upon a vertical spacing in the viewer's eyes. However, claims 2 and 15, and paragraph [0024] clearly indicate the spacing of pixel sections in the Y perpendicular direction. This spacing is not intended to provide, nor is it claimed to provide, 3D viewing in a direction perpendicular to the horizontal. Rather, the disclosed and claimed, Y definition is designed to improve visibility and to reduce fatigue (paragraph [0024]).

The Examiner *objects* to claims 1, 6, 14 and 19 in view of the recitations of "in a matrix state". Claims 1, 6, 14 and 19 have been amended to more clearly and particularly claim

Applicant's invention in compliance with 35 U.S.C. §112, 2nd paragraph. Accordingly, withdrawal of this objection is respectfully requested.

The Examiner *objects* to claims 1, 6, 14 and 19 in view of the recitations of "at least one array direction out of the array directions of said pixels sections" and "another array direction". Claims 1, 6, 14 and 19 have been amended to more clearly and particularly claim Applicant's invention in compliance with 35 U.S.C. §112, 2nd paragraph, where one and another array directions specify perpendicular directions. Accordingly, withdrawal of this objection is respectfully requested.

The Examiner *objects* to claims 1, 6, 14 and 19 in view of the recitations of "the distance between the most distant point...by positioning a midpoint between a viewer's right eye and left eye in the range and said display panel", alleging that such claim language is confusing and indefinite. Claims 1, 6, 14 and 19 have been amended to more clearly and particularly claim Applicant's invention in compliance with 35 U.S.C. §112, 2nd paragraph, where the distance is measured in a normal direction and the viewer's midpoint is positioned in the three-dimensional visible range (*for example*, Fig. 11, range 7; (paragraph [0047])). Accordingly, withdrawal of this objection is respectfully requested.

The Examiner objects to "tan(1') in claims 1, 6, 14, and 19 for failing to provide a definition and meaning of such symbol. One ordinarily skilled in the art recognizes "tan" as equal to the ratio of sin to cos for a given angle. Here the given angle is "(1')", readily

recognized as one minute, one-sixtieth of one degree, by one ordinarily skilled in the art. Further, the specification has been amended to clearly indicate that 1' refers to the angle α shown in Fig. 11 and described in paragraphs [0024] and [0084]. Accordingly, withdrawal of this objection is respectfully requested.

The Examiner rejects claims 1, 3, 6, 8, 11-14, 16, 19, 21 and 24 under 35 U.S.C. §103(a) as allegedly being unpatentable over *Momochi* (U.S. Patent No. 5,528,420).

Claims 1 and 14. *Momochi* discloses setting the pitch of each set of picture elements smaller at a peripheral portion of the lenticular lens device in the arrangement direction of the lenticular lenses compared to the picture elements at a central portion of the lenticular lens device (col. 4, lines 20-27 and 36-41; Fig. 7).

The Examiner appears to be reading picture element pitch, disclosed in *Momochi*, as equivalent to the “definition” in Applicant’s claim (*Momochi* at col. 4, lines 20-27; *Applicant* claims 1 and 14). In contrast to the picture element pitch disclosed in *Momochi*, Applicant claims a definition as a function of the distance (D) in the normal direction from the display panel to the viewer. Further, Applicant defines this function in terms of a minimum viewing angle of 1'. Further, Applicant’s definition will be constant for a given distance (D). *Momochi* specifically discloses and teaches a definition, picture element pitch, which varies incrementally toward the periphery of the display panel for a given distance (D). Neither in the text at large, nor in the text cited by the Examiner, does *Momochi* disclose a minimum viewing angle.

Momochi teaches away from Applicant's claimed constant definition for a given distance, D, by teaching an incremental variation in picture element pitch. At least for failing to teach or suggest a constant definition for a given distance, D, as a function of a 1' minimum viewing angle, the alleged obviousness rejection of claims 1 and 14 over *Momochi* under 35 U.S.C. §103(a) should be withdrawn.

Claims 6 and 19. At col. 10, *Momochi* teaches that for a given lens pitch of 0.2 and a given eye separation of 65 mm, an incremental decrease in picture element pitch as the location of the picture element moves towards the periphery will be 1.538^{-4} mm. Further, *Momochi* discloses that a 200 mm display using the parameters above will yield 1,000 lenticular lenses and an accumulated output image pitch increment of 0.15 mm.

In contrast, Applicant claims a definition in at least one array direction of 175 dpi or greater for a given distance (D), in a normal direction from the display panel to the viewer, of 500 mm. At least for failing to suggest a minimum definition of 175 dpi in at least one array direction for a distance D of 500 mm, the alleged obviousness rejection of claims 6 and 19 over *Momochi* under 35 U.S.C. §103(a) should be withdrawn.

The Examiner also rejects claims 2, 4, 7, 9, 15, 17, 20 and 22 under 35 U.S.C. §103(a) as allegedly being unpatentable over *Momochi* as applied to claims 1, 6, 14 and 19 above, and further in view of *Isono, et al.* (U.S. Patent No 5,315,377) ("*Isono*").

In addition, the Examiner rejects claims 5, 10, 18 and 23 under 35 U.S.C. §103(a) as allegedly being unpatentable over *Momochi* as applied to claims 1, 6, 14 and 19 above, and further in view of *Chikazawa* (U.S. Patent No. 5,852,512).

As discussed above the primary reference, *Momochi*, fails to teach or suggest a minimum definition of 175 dpi in at least one array direction for a distance D of 500 mm (independent claims 6 and 19). Secondary references, *Isono* and *Chikazawa*, also fail to teach or suggest this element of Applicant's independent claims 6 and 19. At least for depending from an allowable independent claim, claims 7-10 and 20-23 are asserted as being in condition for allowance, and withdrawal of the rejections of said dependent claims under 35 U.S.C. §103(a) over *Momochi*, under 35 U.S.C. §103(a) over *Momochi* in view of *Isono*, and under 35 U.S.C. §103(a) over *Momochi* in view of *Chikazawa* are hereby respectfully requested.

As discussed above, the primary reference, *Momochi*, fails to teach or suggest a constant definition for a given distance, D, as a function of a 1' minimum viewing angle (independent claims 1 and 14). Secondary references, *Isono* and *Chikazawa*, also fail to teach or suggest this element of Applicant's independent claims 1 and 14. At least for depending from an allowable independent claim, claims 2-5, 15-18, and 24 are asserted as being in condition for allowance, and withdrawal of the rejections of said dependent claims under 35 U.S.C. §103(a) over *Momochi*, under 35 U.S.C. §103(a) over *Momochi* in view of *Isono*, and under 35 U.S.C. §103(a) over *Momochi* in view of *Chikazawa* are hereby respectfully requested.

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In view of the preceding amendments and remarks, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue that the Examiner feels may be best resolved through a personal or telephonic interview, she is kindly requested to contact the undersigned at the local telephone number listed below.

The USPTO is directed and authorized to charge all required fees (except the Issue/Publication Fees) to our Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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